

Key Knowledge/Prior Learning KS2/3 and Retrieval and Suggested Starters

- Understand reverse operations.
- Simplify & manipulate algebraic expressions.
- Solve equations.
- Knowledge of the greater than/less than symbol.
- Arithmetic with negative numbers.

Retrieval and Suggested Starters

- Practicing the fluency of the above skills.
- Interleaving & problem-solving questions involving the above topics.

KS4 National Curriculum – what students will be practicing

- Solve linear inequalities in one variable
- Represent the solution to an inequality on a number line.
- State integer solutions to an inequality.
- Solve two linear inequalities and write down the integers that satisfy both inequalities

Specific Ambitious Knowledge

- Interleaving topics & problem-solving scenarios.

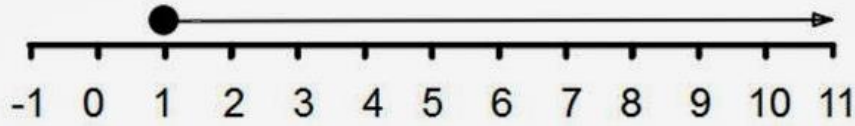
Key Vocabulary/Literacy Opportunities

- Inequalities
- Represent
- Integer
- Greater than/Less than/Equal to

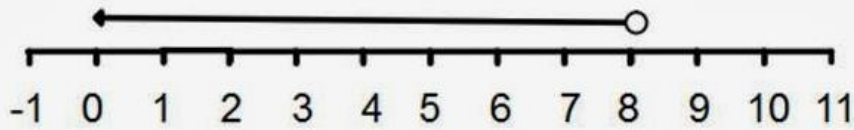
Key Formulae/Knowledge:

Here is a number line:

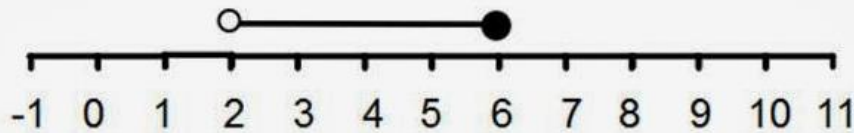
- hollow circle = number not included
- shaded circle = number included



$$x \geq 1$$



$$x < 8$$



$$2 < x \leq 6$$

5.2

Solving Inequalities with Variables on Both Sides

Example 1: Solving Inequalities with Both Sides

Solve the inequality and graph the solution.

$$4m - 3 < 2m + 6$$

$$\begin{array}{r} -2m \\ \hline 2m - 3 < 2m + 6 \end{array}$$

To collect the variable on one side, subtract $2m$ from both sides.

$$2m - 3 < 2m + 6$$

Since 3 is subtracted from the left side, add 3 to both sides to undo the subtraction.

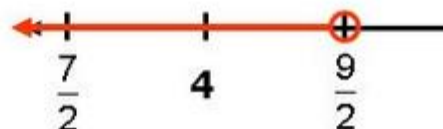
$$\begin{array}{r} +3 \\ \hline 2m < 9 \end{array}$$

$$2m < 9$$

Since m is multiplied by 2 on the left side, divide both sides by 2 to undo the multiplication.

$$\frac{2m}{2} < \frac{9}{2}$$

$$m < \frac{9}{2}$$



Cross Curricular Links

- Real life links to linear programming and modelling.

Student' Thinking

- What happens if you divide/multiply an inequality by a negative number?

Projects/Enrichment/Investigations

- https://nrich.maths.org/7342?utm_source=secondary-map
- [Which Is Bigger?](#)
- Shared documents/Maths/Projects/Problem-solving card sorts.

